

SOURCE WATER ASSESSMENT

In 2015, the Florida Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There is one (1) potential sources of contamination identified for this system (Injection Well) with low susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp or they can be obtained by calling the City of Miramar Customer Service at 954-602-HELP (4357).

HEALTH INFORMATION

If present, elevated levels of lead can cause serious health problems especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Miramar is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Lead may cause high blood pressure, hearing problems and kidney or nervous system disorders in adults. In infants and children, lead can interfere with the formation of blood cells, cause low birth weight, delay physical and mental development or be a cancer risk. At high levels, copper can cause gastrointestinal difficulties.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals such as cancer patients undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants can be particularly at risk from infections. These people should seek advice about their drinking water from their healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.



2015 CITY OF MIRAMAR • FINISHED WATER QUALITY REPORT • JANUARY 1, 2015 - DECEMBER 1, 2015

Microbiological Contaminants							
Contaminant and Unit of Measure	Dates of Sampling (mo./Yr.)	MCL Violation Y/N	Highest Monthly Percent	MCLG	MCL	Likely Source of Contamination	
Total Coliform Bacteria	01/2015-12/2015	N	1.72%	0	Presence of coliform bacteria in >5.0% of samples collected during a month.	Naturally present in the environment	
Contaminant and Unit of Measure	Dates of Sampling (mo./Yr.)	MCL Violation Y/N	Total Number of Positive Samples for the Year	MCLG	MCL	Likely Source of Contamination	
Fecal Coliform Bacteria/E. coli	03/2015, 12/2015	N	2	0	0	Human or animal fecal waste	
Inorganic Contaminants							
Contaminant and Unit of Measurement	Dates of Sampling (mo./Yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	9/2015	N	0.005	ND-0.005	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride(ppm)	9/2015	N	0.745	0.697-0.745	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories; Water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Nitrate (as Nitrogen) (ppm)	9/2015	N	0.327	0.0697-0.327	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium(ppb)	9/2015	N	5.1	ND-5.1	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	9/2015	N	27.3	20.0-27.3	N/A	160	Salt water intrusion; leaching from soil
Disinfectants and Disinfection By-Products							
Contaminant	Dates of Sampling (mo./Yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Halooacetic Acids (HAA5) (ppb)	02/15, 05/15, 08/15, 11/15	N	48.6	5.47-65.8	N/A	60	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	02/15, 05/15, 08/15, 11/15	N	72.9	14.6-114.7	N/A	80	By-product of drinking water disinfection
Chlorine and Chloramines(ppm)	01/2015-12/2015	N	3.94	0.73-4.00	MRDLG=4	MRDL=4.0	Water additive used to control microbes
Lead and Copper (Tap Water)							
Contaminant	Dates of Sampling (mo./Yr.)	AL Exceeded Y/N	90th Percentile Results	No. of Sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	06/2014-07/2014	N	0.365	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	06/2014-07/2014	N	9	6	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Unregulated Contaminants Monitoring Rule(UCMR3)							
Contaminant	Level Detected	Range	Draft Reference Concentration	Likely Source of Contamination			
Perfluorooctanoic Acid (PFOA) (ppb)	0.021	ND- 0.021	ND- 0.021	Used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foam, cleaners, cosmetics, grease and lubricants, paint, polishes, adhesives and photographic films.			
Perfluorooctanesulfonic acid (PFOS) (ppb)	0.047	ND – 0.047	0.07	Surfactant or emulsifier, used in fire-fighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps; U.S. manufacture of PFOS phased out in 2002; however, PFOS still generated incidentally.			

The EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water.

*The City of Miramar monitored in 2014 unregulated contaminants (UCs) as part of a study to help the United States Environmental Protection Agency (EAP) determine the occurrence in drinking water of Ucs and whether or not these contaminants need to be regulated. At present, no health standards (for example, maximum contaminant levels) have been established for Ucs. However, we are required to publish the analytical results of our UC monitoring in our annual water quality report. If you would like more information on the EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at 800-426-4791.

HELPFUL INFORMATION

Super-chlorination is a common utility practice that the City of Miramar employs to maintain water quality in the distribution system. This event generally takes place for two consecutive weeks during the last quarter of 2016. Further information will be provided on water bills, local newspapers, the City's cable channel and the City's website.

DEFINITIONS & ABBREVIATIONS

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goal (MCLG) as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

- A.** Absent
- ND:** Non-detectable
- ppCi/L:** Picocurie per liter, a measure of radioactivity in water
- ppm:** Parts per million
- ppb:** Parts per billion

INFORMATION

WATER CONSERVATION PROGRAM

Water is an essential part of our everyday lives, and conserving water is the most cost-effective and environmentally sound way to reduce demand on our natural resources. To promote environmental protection and public awareness, the Department of Utilities offers public outreach and educational programs for all who have an interest in helping reduce water consumption. We offer these programs to civic groups, homeowner associations and local schools, and are available for career day events. Our programs include facility tours, water and environmental conservation, and sewer back-up prevention. To schedule an outreach event, please call 954-602-HELP (4357) or email pw-utilcsrt@miramarfl.gov.

Water conservation starts with you and by becoming conscientious in reducing the amount of water your household uses, as well as finding different ways to use less; you can save money in the process. It is easier than you think. Here are a few conservation tips:

- Automatic dishwaters use 15 gallons per cycle, regardless of how many dishes are loaded. Load to capacity and save money.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Did you know just by listening, you could check your toilet for leaks? You can also check by adding a few drops of food coloring in the tank, or placing dye tabs, which the City of Miramar offers free of charge, and watch to see if the color shows up in

- the bowl without flushing. If you do detect color in the bowl, it means you have a leak. An average toilet leak can waste up to 100 gallons a day. Fixing a toilet leak saves 30,000 gallons a year.
- Using your water meter to detect hidden leaks is easy. Located in the front of your home, your meter has a small triangle that moves while consumption is in use. Simply turn-off all your faucets and wait 15 minutes. After time has lapse, check the meter again and if the small triangle is still moving, you have a leak.
- Finally installing low flow aerators and showerheads in an effective method in saving water. The installation is a very simple operation, which the homeowner can do and does not require the use of tools.

washer, dryer, dish-washer, irrigation system and water-conserving plumbing fixtures. Ms. Francis offered the following acrostic poem

Changing minds and attitudes,
Omitting all the waste.
Now-a-days we must conserve to
Save the human race.
Environmental consciousness will help create the change,
Reclaiming water, cutting back and making use of rain.
Valuing our water will secure our planet's fate.
Ensuring that we all survive to see another day.



LOOK FOR THE LABEL

The WaterSense label will help you identify high-efficiency products, homes and programs. These water efficient options provide the same performance and quality you've come to expect, but with the added benefit of water savings.

WaterSense labeled products are backed by independent third party certification and meet EPA's specifications for water efficiency and performance. So, when you use WaterSense labeled products in your home or business, you can be confident you'll be saving water without sacrifice.

* This information is provided courtesy of EPA (Environmental Protection Agency) For more information visit www.epa.gov.

CITY OF MIRAMAR
YEAR-ROUND LANDSCAPE IRRIGATION
RULE

Pursuant to South Florida Water Management District

All Landscaping

- Watering is not allowed between 10 a.m. and 4 p.m.

Residents and businesses with **odd-numbered** street addresses may water lawns and landscapes on **Wednesdays** and **Saturdays before 10 a.m. or after 4 p.m.**

Residents and businesses with **even-numbered** street addresses, no street address or irrigate both even and odd addresses within the same zones, which may include multi-family units and homeowners associations, may water lawns and landscapes on **Thursdays** and **Sundays before 10 a.m. or after 4 p.m.**

- For the most efficient use of water, residents should avoid irrigating during both time periods on the same day.

New Landscaping, Sod or Other Plantings

New landscaping that has been in place **less than 30 days** can be watered on **Mondays, Tuesdays, Wednesdays, Thursdays, Saturdays and/or Sundays only before 10 a.m. or after 4 p.m.**

Landscaping that has been in place **31 days to 90 days** can be watered on **Mondays, Tuesdays, Wednesdays, Thursdays, Saturdays and/or Sundays only before 10 a.m. or after 4 p.m.**

Landscaping that has been in place **31 days to 90 days** can be watered on **Mondays, Wednesdays, Thursdays and Saturdays** during the hours allowed for regular landscape irrigation.

Reclaimed Water for Irrigation

- Residences and businesses that use reclaimed water for irrigation are allowed to water all days, except between 10 a.m. - 4:00 p.m.

Violations

- Local law enforcement or city/county zoning and code enforcement agencies have the authority to issue warnings and citations that can lead to fines.

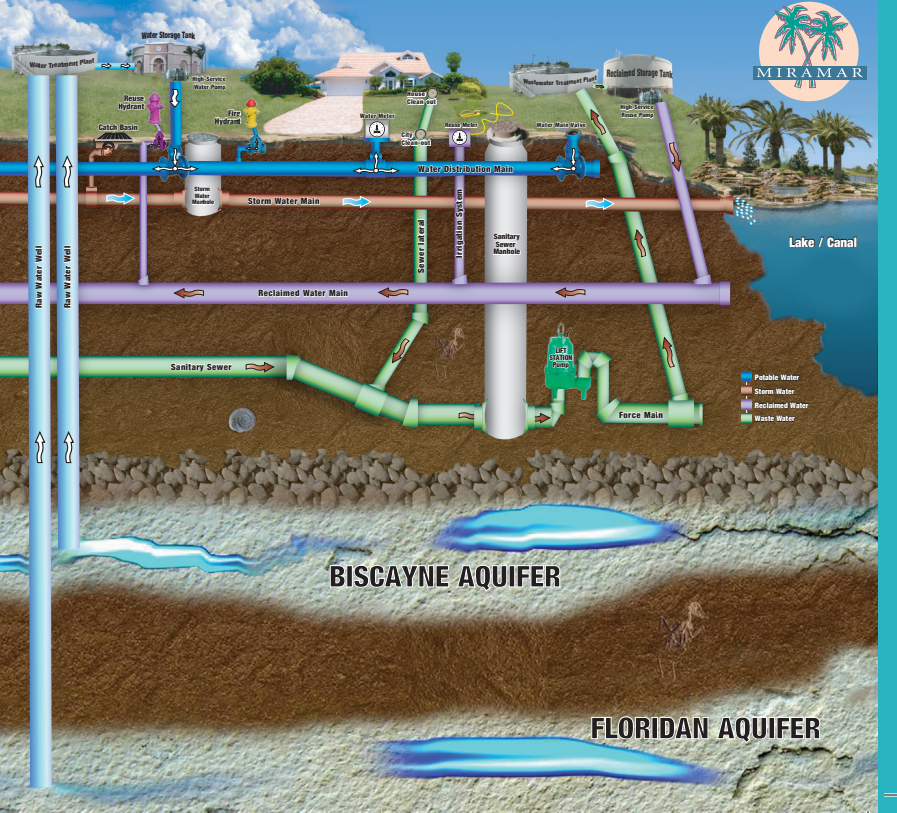
- Violations of water restrictions may be reported to City of Miramar Code Enforcement at (954) 602-HELP or (954) 602-4357.

For more detailed information, please log onto www.miramarfl.gov/utilities and/or www.sfwmr.gov/waterwatch

* This information is provided courtesy of EPA (Environmental Protection Agency) For more information, visit www.epa.gov.



UTILITIES CONVEYANCE SYSTEM
Potable Water, Waste Water, Storm Water & Reclaimed Water System



A MESSAGE FROM THE CITY MANAGER

Dear Miramar Residents and Businesses,

For 60 years, we have been committed to providing safe and reliable drinking water. We have accomplished this obligation by meeting the Federal Standards for potable water quality and our dedicated employees continue to ensure the reliable delivery of clean and safe drinking water to your tap as well as the return of treated wastewater to the environment.

The Water Quality Report is our annual and mandatory publication set forth by the Environmental Protection Agency as a way to provide an insight into the processes that we follow, to ensure that you receive the quality services in drinking water and I can assure you that maintaining these high standards is a year-round effort. Furthermore, we recognize that quality drinking water is not only a basic need, but also an essential part in continuing economic growth and development in Miramar. Therefore, I give you my pledge that we will continue to maintain our production and delivery systems in order to ensure that our customers have sustainable water for generations to come.

Our Capital Improvement Program (CIP) allows us to maintain and improve the water and wastewater infrastructure. The CIP projects are designed to replace aging equipment at the treatment facilities, expand treatment capacity to accommodate population growth, improve treatment processes and rehabilitate water and sewer piping systems. In 2015, we improved our system with the following capital projects:

- Approximately 11,100 linear feet of sewer pipes were lined using cured-in-place pipe (CIPP) technology which entailed installing polyethylene liners inside the existing sewer pipes without excavation to repair leaks and restore the integrity of the collection system.
- Rehabilitation work was completed on Lift stations number 21 and 24 in the River Run area. Lift stations are a critical component of the sewer system that are designed to transmit sewage via force to the wastewater treatment plant.
- Our leak detection program is a pre-emptive measure used to detect underground leaks before they surface by using ground penetrating sonar technology. With this program, 319 water leaks were discovered and repaired before they surfaced.
- The continuation of our water meter repair and replacement program for 2015 resulted in the replacement and upgrade of approximately 3,000 water meters and meter components that had reached their useful life to ensure accurate water accountability.

These are just a few of the initiatives that the Utilities Department has undertaken in order to make sure that quality water is **Right Here in Miramar!**

Kathleen Woods-Richardson

Kathleen Woods-Richardson
City Manager

2015 WATER AND WASTEWATER PROJECTS UPDATE

NEIGHBORHOOD IMPROVEMENTS

The City of Miramar Utilities Department has continued our commitment to provide water and wastewater improvements throughout the City.

Leak Detection Program

To promote the City's ongoing conservation efforts, the City of Miramar hired a contractor to perform an advanced acoustic survey of the water system to detect hidden leaks that were not visible at ground surface. The three-month project conducted in the summer of 2014 incorporated surveys of more than 90 miles of pipelines and thousands of service connections. The results were that over 250 leaks were detected and repaired by City staff which has reduced water loss by approximately 700,000 gallons per day. In continuing this effort, the City will conduct a second round of surveying and repairs and the City also plans to train and implement an in-house leak detection program in 2015 to maximize water recovery.

Wastewater Collection System Rehabilitation

The City of Miramar's wastewater collection system provides sewer services to the residents and businesses of Miramar. Due to aging and normal deterioration, the sewer pipes which were constructed in the 1950's need to be repaired and/or replaced as they have reached the end of their useful life.

As an on-going effort of maintaining sewer services while eliminating groundwater infiltration/inflow (I/I), the City was able to rehabilitate approximately 11,600 linear feet of gravity sewer pipe lines in the area located east of Douglas Road. The pipe lines were rehabbed using a newly developed trenchless technology to restore sewer services without excavation-- resulting in reduced roadway construction and disruption to the residents and businesses in the area.

Reclaimed Water Customer Connections

From the expansion of the reclaimed distribution system in 2014, the City of Miramar was able to connect 201 single family residences, three multi-family developments and six commercial customers for a grand total of 111.6 acres for irrigation purpose.

As part of our conservation efforts, the City of Miramar will continue to implement its reclaimed water program and extend water services to more communities and businesses. The benefits of connecting more customers to the reclaimed water system help to promote water conservation, encourage efficient and effective use of reclaimed water and assist in keeping utility rates down.

The City of Miramar continues to collaborate with the State of Florida; the Florida Department of Environmental Protection; the Florida Section of the WaterReuse® Association and the South Florida Water Management District in promoting water reuse and conservation.



For water test results, please call
Regulatory Compliance Superintendent, Mr. José Cardoso at
(954) 883-6851.

For all inquiries i.e., water leaks, water service activation, water billing
questions and general questions, please contact the Customer Service
Response Team at (954) 602-HELP (4357).

BOARD MEETINGS INFORMATION
Board meeting are held at the following location:
Commission Chambers
2300 Civic Center Place, Miramar, Florida 33025

Meetings are held every first and third Wednesday at 7:00 pm. For further
information regarding board meeting, please contact the City Clerk's office at
(954) 602-3011 or visit our website at: www.miramarfl.gov.

This Miramar Water Report was produced by the Utilities Department of the
City of Miramar, Florida Published June 2016. Also available in Spanish at:
www.ci.miramar.fl.us/utilities/lab.html
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CITY OF MIRAMAR WATER QUALITY REPORT

Office of Operational Services | Department of Utilities

2015
EDITION



CITY COMMISSION
Wayne M. Messam,
Mayor

Maxwell Chambers
Vice Mayor
Winston F. Barnes
Yvette Colbourne
Darline B. Riggs

CITY MANAGER,
Kathleen Woods-Richardson

**ASSISTANT CITY MANAGER,
OPERATIONAL SERVICES**
Michael J. Moore

DIRECTOR OF UTILITIES,
Hong Guo, P.E.

Este es un reporte de suma importancia, con respecto a la
calidad de su agua. Si usted quiere recibir este folleto en español,
por favor llame al telefono (954) 602-4357
o visite: www.miramarfl.gov/utilities/lab.html

it's
**RIGHT
HERE**
in MIRAMAR...

WHERE DO WE GET OUR WATER?

Miramar's drinking water comes from two underground reservoirs, the Biscayne Aquifer and Floridan Aquifer. The Biscayne Aquifer is a highly porous zone recharged primarily by rainfall and by surface water sources, mainly Lake Okeechobee and the Everglades. It is located approximately 60 to 150 feet below Miramar's ground surface. The Floridan Aquifer is a deeper and more confined aquifer, where water is withdrawn at approximately 1,350 feet below Miramar's ground surface.

WATER TREATMENT

The City of Miramar operates two water plants, the East and the West Water Treatment Plants and with the use of supply wells, draws the water directly from both the Biscayne and Floridan Aquifer. The water passes through two different processes; at the West Water Treatment Plant nanofiltration and reverse osmosis and at the East Water Treatment Plant, a conventional lime softening process. Both processes are design for the removal of sediments, harmful bacteria and certain minerals before disinfection by chlorination. The water is fluoridated before leaving the plants to travel through the water distribution system

DRINKING WATER CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about

contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

WATER QUALITY

The City of Miramar's Water Treatment Facilities are in compliance with all National Primary Drinking Water Regulations (NPDWR). Lead, copper and radioactive tests are conducted once every three years.

When water leaves the treatment plants, it is virtually free of lead and copper. Lead contamination comes primarily from household plumbing corrosion. Lead and copper were sampled at 84 voluntary sites in 2014. The 90th percentile value of the latest samplings for lead and copper are reported in the attached table. Even though six sites exceeded the action level for lead, they were resampled and results indicated that they were in compliance. Some homes with lead services and pipes may experience higher levels. If you are not sure whether your pipes contain lead or copper, run tap water from the faucet until it changes temperatures to flush the pipes prior to consumption.

The City of Miramar's public water system routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2015. Data obtained before January 1, 2015, and presented in this report are from the most recent testing done in accordance with the laws, rules, and regulations.